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ABSTRACT

Differences between two models of student-instructor disparity regarding educational views and preferences in accounting for variance in course rating scores were investigated. Undergraduates in nine classes completed the Student Instructional Report (SIR) and the Student Orientations Survey; instructors completed a parallel inventory, the Faculty Orientations Survey. On each orientation scale, a student's score was compared with his instructor's score and two disparity scores were calculated: 1) an absolute disparity score (which assessed only the magnitude of disparity, and 2) a relative disparity score (which assessed both magnitude and direction of disparity). After accounting for class differences and student orientation scores in their own right, multiple regression analyses involving course rating scores yielded significant increases in explained variance for three SIR course rating scales when student-instructor relative disparity measures were included. The inclusion of absolute disparity measures in lieu of relative disparity yielded insignificant changes in explained variance. Moreover, on these three SIR scales, relative disparity measures generated larger increases in explained variance compared to the inclusion of student orientation scores per se. (Author/MV)

Two Conceptualizations of Student-Instructor Disparity: An Analysis of Absolute and Relative Disparity Models in Relation to Course Evaluation Ratings

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Abstract

This study investigated the differences between two models of student-instructor disparity regarding educational views and preferences in accounting for variance in course rating scores. Undergraduates (N=359) in nine classes completed the Student Instructional Report and the Student Orientations Survey; instructors completed a parallel inventory, the Faculty Orientations Survey. On each orientation scale, a student's score was compared with his/her instructor's score and two disparity scores were calculated: a) an absolute disparity score (which assessed only the magnitude of disparity, and b) a relative disparity score (which assessed both magnitude and direction of disparity). After accounting for class differences and student orientation scores in their own right, multiple regression analyses involving course rating scores yielded significant ($p < .01$) increases in R^2 for three of four SIR course rating scales when student-instructor relative disparity measures were included. The inclusion of absolute disparity measures in lieu of relative disparity yielded insignificant changes in R^2. Moreover, on these three SIR scales, relative disparity measures generated larger increases in R^2 compared to the inclusion of student orientation scores per se. Suggestions for future research and considerations regarding the definition and nature of student-instructor disparity were discussed.

Student-Instructor Disparity in Educational Orientations: An Analysis of Absolute and Relative Disparity Models in Relation to Course Evaluation Ratings

In the changing milieu of postsecondary education, the role and use of student ratings of courses and instructors could very likely undergo critical examination. Historically, the primary basis for student evaluations has been in the area of instructional improvement, and there is some evidence that student evaluations may foster instructor adaptiveness and instructional improvement (Centra, 1972). With the growth of student consumerism concerns and familiar cries of accountability, more questions might be raised as to what students are getting from their education and/or particular courses and programs of instruction. Equally important, given the worsening economic and increasingly litigous framework affecting colleges and universities, the use and validity of course evaluations may become a more significant topic in the context of faculty personnel decisions. It would seem desirable, therefore, to further investigate certain student and faculty characteristics which may be associated with student ratings of courses and instructors.

As noted by Costin, Greenough, and Menges (1971), few studies have examined student and faculty personality characteristics and orientations in relation to student ratings. Of the efforts

in this area, several have dealt solely with instructors' personality correlates (Bendig, 1955; Isaacson, McKeachie & Milholland, 1963; Sorey, 1968) while others have only assessed students' personality correlates with ratings (Rezler, 1965; Yonge & Sassenrath, 1968; Grande & McCollester, 1974).

In these studies, particular items from a given course evaluation instrument have been correlated with scales from general personality inventories. Thus, few attempts have been made to assess the relationship between student or faculty orientations with more broadly-based "dimensions" of course ratings. Moreover, as noted by Miller (1974), only a few studies have examined ratings in the context of student and faculty characteristics taken together--that is, an assessment of the congruence or fit of student and faculty orientations in relation to student evaluations.

In this area, Day (1969) and Davison (1973) obtained students' perceptions of their instructor regarding selected personality constructs. Both investigators concluded that the raters' perceptions of the instructor had an association with course ratings. Tetenbaum (1975) found some support for the hypothesis that specified social psychological needs of students were related to teacher orientations congruent with these needs. It should be noted, however, that this study involved general personality characteristics of graduate students and that the evaluation of the instructor was obtained with one item (categories ranging from very poor to excellent). More substantively, this effort was a simulation--no actual teachers were used; Tetenbaum's pilot

investigation had students repond to a set of statements designed to reflect a particular teacher orientation, not the range of orientations which an instructor may actually exhibit in a classroom situation.

DiMarco (1974), in an actual high school class situation, obtained student and teacher characteristics independently; that is, teachers' attitudes were obtained directly from teachers rather than student perceptions of teacher characteristics, thus constituting an "alpha" press in Murray's (1938) framework. His findings indicated that eleventh-grade students' general evaluations of their teacher and their classroom environment were related to the degree of student/teacher congruence in life style and learning structure orientation.

In the related domain of student satisfaction research, Walsh's (1973) review of person-environment interaction models suggests that individuals congruent with their environment report the highest degree of satisfaction with aspects of the college experience. With respect to this study, the classroom can be viewed as an "environment" which is largely shaped by faculty prerogatives and views regarding educational purpose and process. It could be advanced, therefore, that the interplay of a student's and an instructor's educational attitudes and preferences--perhaps the "fit" of educational orientations--may be related to student ratings of instruction.

The definition and nature of "fit" is itself a question to consider, a question which forms the primary basis of this study.

DiMarco (1974), for example, employed absolute disparity scores--the direction of student-teacher disparity was ignored. In this framework, the relationship between ratings and magnitude of disparity was addressed, a model of disparity which others have used in studies of student-college congruency in relation to student satisfaction with college (Pervin, 1967; Pervin & Rubin, 1967).

From a conceptual standpoint, however, the direction of student-teacher differences in estimating incongruence could be an important consideration. That is, students may be generally congruent with their instructor's educational orientation, or may manifest an orientation to a greater or lesser degree than their instructor. In this latter situation, "incongruence" may be viewed in two distinct forms. Is this distinction important with respect to course evaluation ratings?

Thus the purpose of this study is to determine whether measures of student-instructor relative disparity (based on magnitude and direction of disparity) account for more variance in course ratings than measures of student-instructor absolute disparity (based on magnitude alone). As detailed subsequently, a provision has been made to account for variance in course ratings due to student orientations in their own right and by employing the same data base, the importance of an absolute disparity model can be compared with that of relative disparity in the context of student course ratings.

Method

Sample

The subjects for this study consisted of 359 undergraduates and nine faculty members at an eastern public university. Students were enrolled in one of nine undergraduate courses in the following areas: psychology, sociology, political science, literature, chemistry, economics, and education. These classes were all at the introductory or intermediate level, and class sizes averaged 40 students each, ranging from 25 to 62 students.

Instrumentation

All undergraduates completed the Student Orientations Survey (Morstain, 1973a) and the Student Instructional Report, a standardized course evaluation instrument (Centra, 1973). Each faculty member completed the Faculty Orientations Survey (Morstain, 1973c), a parallel instrument to the Student Orientations Survey (SOS). The SOS and the Faculty Orientations Survey (FOS) are instruments which provide a profile of an individual's orientations regarding the nature, purpose, and "process" of a college education. Each orientation scale has eight items (with a four-point Likert response), and scale scores can range from 0 to 24. Six scales in the inventories relate directly to curricular-instructional preferences while four scales tap co-curricular orientations. The former six scales were used in this study, and brief scale descriptions follow: Achievement: taps a practial, goal-oriented outlook which gauges various aspects of the college experience in terms of their future usefulness; Assignment Learning: relates

to a preferred teaching-learning mode which emphasizes formal courses with specific, clear-cut assignments; Assessment: emphasizes the importance of formal evaluations and grades--grades are valued because they provide a measure of a student's abilities as well as some incentive for using those abilities; Inquiry: stresses the value of exploring one's interests, the perception of relationships between various fields; a belief that "learning is its own reward;" Independent Study: indicates a preference for informal, unstructured courses in which students set their own goals and standards and pursue their own interests with faculty supervision; Interaction: reflects a desire that faculty and students share in the planning of courses, programs, and academic requirements.

The content of the eight items which comprise each educational orientation scale are identical for the SOS and FOS,[1] and scale reliabilities range from .70 to .88 (coefficient alpha). Detailed information on the validity and reliability of the inventories is presented elsewhere (Morstain, 1973b).

As reported by Centra (1973), factor analysis of the Student Instructional Report (SIR) yielded six dimensions: (1) Teacher-Student Relationships (measures the degree to which an instructor is open to student viewpoints, is concerned about their learning, etc.--eight items); (2) Course Objectives and Organization (assesses how well the instructor has organized the course and has achieved his or her objectives--seven items); (3) Quality of Lectures (measures the general quality or value of lectures and

class discussions--six items); (4) Quality of Reading Assignments (assesses the overall value of the readings and, in general, the value of the course to the student--four items); (5) Course Difficulty/Workload (high scores on items loading on this dimension indicate that students feel that the workload and pace of the course was too fast or too difficult--three items); (6) Examinations (provides an overall rating of exams and their relationship to course objectives--two items).

Procedure

Summative scale scores were generated for students on the first four SIR dimensions. "Course Difficulty/Workload" and "Examinations" were not used in this study due to the small number of items representing these dimensions. Due to the varying number of items per SIR scale, these scale scores were transformed to standard (T) scores with a mean of 50. Additionally, a student's score on an educational orientation (SOS) scale was compared with his or her particular instructor's score,[2] and two disparity scores were calculated for each student: a) relative disparity, which reflected degree and direction of the difference--for example, a score of +5(-5) indicated that a student's orientation scale score was five points higher (lower) than his/her instructor's score; b) absolute disparity, which was based solely on the magnitude of disparity and ignored the directional difference. In both approaches, a score of "0" indicated that the student and his/her instructor had identical scores on a particular educational orientation scale.

A multiple regression procedure (Nie, et. al., 1975) was performed for each SIR scale using as independent variables students'

SOS scores and absolute disparity or relative disparity scores. The purpose of these analyses was to determine the importance and potency of students' educational orientations and two measures of disparity with their instructor in accounting for variance in the dependent course rating scores.

To determine whether a common multiple regression approach was possible (i.e., combining students in all nine classes) an analysis of group dispersion matrices on the independent variable orientation scores was assessed by Boxes (1949) extension of Bartlett's (1937) test. The derived F was 1.17 (df=168, 82124, $p > .05$). Furthermore, inspection of the nine class means indicated that only modest variation existed across groups; a significant ($p < .05$) univariate F ratio was obtained only for the Interaction scale. These preliminary findings indicated that the nine groups of students could be combined for common multiple regression analyses of the course rating scales on the independent orientation variables.

However, the SIR course rating scales did exhibit variation across the nine classes. All univariate F ratios for the four SIR scales were significant at the $p < .01$ level. Moreover, the test of homogeneity of group dispersion matrices resulted in an F ratio of 9.36 (df=80, 91348), significant at the $p < .01$ level. These preliminary findings suggested that class variation in the dependent SIR scores could confound the interpretability and validity of the SIR score regressions on the orientation and disparity measures. Following an approach suggested by Kerlinger

and Pedhazur (1973), dummy variables signifying class membership were created to take account of variance in the dependent variable SIR course ratings due to class differences.3

To summarize, it should be noted that a hierarchical multiple regression approach (Nie, et. al., 1975) was employed to answer the following order of questions posed in this study: (1) how much variance in SIR ratings was due to class differences? (the dummy variables therefore comprised the first set of variables included in the regressions); (2) What was the incremental increase in explained variance (R^2) attributable to students' educational orientations in their own right? (SOS scale scores comprised the second set of variables entered); (3) What was the incremental increase in explained variance in SIR scores if measures of student-instructor <u>absolute</u> disparity were next included in the regression equation? (4) After repeating steps one and two, i.e., dummy variables and SOS scores, what was the incremental increase in explained variance in SIR scores if measures of student-instructor <u>relative</u> disparity in lieu of absolute disparity were included in the regression equation?

Results

Table 1 presents the results of the multiple regression analyses for each SIR scale as described above. It should be noted that step 3, the inclusion of student-instructor disparity scores, is separated into two sections--one for relative disparity scores and one for the inclusion of absolute disparity scores.

(insert Table 1 about here)

For the SIR scale Teacher-Student Relations, approximately 24% of the variance in these course rating scale scores was attributable to class-by-class differences in absolute ratings. Entering as step 2 students' orientation scores boosted R^2 to 26%; using a procedure discussed by Kerlinger and Pedhazur (1973), this R^2 change was not significant ($F=1.33$, $p > .05$). After taking into account variation due to class differences and students' SOS scores, adding students' absolute disparity scores boosted R^2 to 27%; the F ratio for R^2 change (step 2 to step 3), was insignificant ($F=1.09$, $p > .05$). However, when students' relative disparity scores were included as step 3, R^2 was increased to 33% (F ratio for R^2 change = 6.47, $p < .01$).

For the SIR scale Course Objectives and Organization, step 1 (class differences) accounted for approximately 12% of the variance in this course rating scale. Students' SOS scores (step 2) boosted R^2 to 16%, and adding student-instructor absolute disparity measures increased R^2 to only 18%, an insignificant change in R^2 ($F=1.25$, $p > .05$). Adding relative disparity scores, however, yielded an increase in R^2 to 31% (step 2 to step 3). The derived F for R^2 change was 12.04 ($p < .01$).

The above pattern also was observed for the SIR scale Quality of Lectures. Class differences accounted for 13% of this SIR scale variation, while adding as step 2 students' SOS scores boosted R^2 to approximately 17% (F for R^2 change = 2.85; $p < .05$). The addition of absolute disparity scores as step 3 increased R^2 to only 19% (F for R^2 change step 2 to step 3 = 1.04, $p > .05$).

In lieu of absolute disparity, entering as step 3 relative disparity scores boosted R^2 to 30%, and the derived F for R^2 change (10.00) was significant at the $p < .01$ level.

For the SIR scale Quality of Readings, as distinct from the three previous scales, the addition of measures of student-faculty absolute or relative disparity did not generate a significant increase in R^2 change. That is, class differences (step 1) accounted for 19% of the variance in students' scores on this course rating dimension, and the addition of students' educational orientation scores as step 2 boosted R^2 to 27% (F ratio for R^2 change = 6.66; $p < .01$). Adding either type of disparity scores increased R^2 only 3%, with an insignificant F for R^2 change.

Thus with the exception of this final SIR scale, the results indicated that adding measures of students' educational orientations in their own right (i.e., SOS scores) tended to boost R^2 from 2% to 4% in the multiple regression analyses. For these SIR scales, entering <u>absolute</u> disparity scores boosted R^2 from 1% to 2%, in each case generating an insignificant F ratio for R^2 change. On the other hand, when <u>relative</u> disparity scores were entered as step 3, the observed R^2 changes were 7% (Teacher-Student Relations), and 15% and 13% (for Course Objectives/Organization and Quality of Lectures respectively). All of these R^2 changes were significant at the $p < .01$ level. Comparing the importance of the total sets of SOS scores and relative disparity scores, the <u>overall</u> F ratios for these three regression equations at step 3 (relative disparity) were always larger than at step 2

(SOS); moreover, the F ratios for R^2 change were always larger from step 2 to step 3 than step 1 to step 2.

The significance of R^2 change due to particular orientation dimensions is shown in Table 2. Given the previous results, the contribution to R^2 for relative disparity variables is presented for the first three SIR scales while the contribution of students' SOS scores is presented for the final SIR scale, Quality of Readings.

(insert Table 2 about here)

For Teacher-Student Relations, three relative disparity measures (Inquiry, Assignment Learning, Interaction) had significant R^2 changes after they were entered in the regression. This finding was similar, with the addition of Achievement relative disparity, for the SIR scale Quality of Lectures. For Course Objectives and Organization, these four disparity measures plus Independent Study and Assessment disparity scores yielded significant R^2 change. Thus for these three SIR scales, after accounting for variance due to class differences (step 1, dummy variables) and students' educational orientations (step 2, SOS scores), various student-instructor relative disparity scores exhibited significant R^2 change when entered into the regression equations. For the final SIR scale (Quality of Readings), it will be recalled from Table 1 that students' orientation scores in their own right yielded a larger R^2 change than did the addition of either type of disparity measures. In detail, it was found that the SOS scores Inquiry and Assessment generated significant R^2 change; the

addition of other SOS scores did not. It should be noted that the F ratios shown in Table 2 did not consistently decrease in linear fashion. This was due to the stepwise nature of the regressions. At each step the variable with the largest partial correlation with the criterion (SIR scale), after accounting for all previous independent variables, was entered; thus the changes in R^2 and the resultant F ratios reflected this.

Discussion

Previous research on student and faculty characteristics in relation to course ratings has been limited by usual reliance on singular course rating items rather than dimensions of course ratings. Moreover, few studies have examined the "fit" of student and faculty characteristics (or in this case, educational orientations) and the ability of resultant disparity measures in accounting for variance in dependent course evaluation ratings.

Multiple regressions of SIR course ratings gave partial support to the utility of measures of students' "relative fit" with their instructor's educational orientations. After accounting for class differences and students' orientation scores in their own right, the addition of relative disparity scores yielded R^2 increases of 7%, 15%, and 13% for three of four SIR rating dimensions. These changes were significant at the $p < .01$ level. On Quality of Readings, after including students' orientations in their own right, relative disparity measures did not significantly boost R^2.

For the first three SIR scales, however, certain relative disparity variables were prominent across all three course rating scales. That is, inclusion of student-instructor relative disparity on the following educational orientations generated a significant R^2 change:

> Inquiry (an orientation related to views on the purpose of education)
>
> Assignment Learning (an orientation related to preferred teaching-learning modes or the process of education)
>
> Interaction (an educational power dimension related to student-faculty collegiality in decisionmaking)

On "Quality of Lectures," Achievement relative disparity also was a salient factor and on "Course Objectives and Organization" all six relative disparity measures as entered yielded significant F's for R^2 change. Nevertheless, the commonality and general order of inclusion for Inquiry, Assignment Learning, and Interaction relative disparity scores was apparent regarding these three SIR course rating scales.

It is beyond the scope of this paper to address the pattern of actual SIR scores for students judged congruent and incongruent (in a relative disparity sense) with their instructor on various educational orientations. A detailed analysis of differing states of student relative incongruence with instructor in relation to course ratings is presented elsewhere (Morstain, 1976). Rather, this present study examined the importance of two conceptually distinct measures of student-instructor disparity in relation to course ratings--an absolute disparity framework (which

is sensitive only to the magnitude of incongruence irrespective of direction) and a relative disparity scheme (which taps the magnitude and direction of student-instructor incongruence).

The results of this study tend to indicate that relative disparity measures were more salient than absolute disparity measures in accounting for variance in dependent course evaluation scale scores. On three of four SIR scales, after accounting for class differences and students' orientation scores, absolute student-instructor disparity scores boosted R^2 insignificantly. Replacing these variables with relative student-instructor disparity scores yielded significant ($p < .01$) increases in R^2.

It appeared, then, that the nature and direction of student-instructor incongruence in educational orientations may be worthy of consideration when examining student ratings of courses/instructors. Perhaps the relative position of the rater in reference to the instructor's educational orientations may influence the evaluative task at hand.

The parameters and limitations of this study, however, do not permit extensive causal generalizations regarding the impact or effect of student-instructor relative disparity in relation to course ratings. For example, students in this sample completed the SOS inventory near the end of a fourteen-week course. Perhaps those students most incongruent with the instructor had already withdrawn from the course. If so, what was the nature and magnitude of their incongruence, and how would they have evaluated the instructor if they had maintained their enrollment? Perhaps some

students who remained in the course changed or modified their educational orientations to become more congruent with their instructor. Are the end-of-term course evaluations for students who were congruent with their instructor's orientation, at the beginning of the course, more favorable than students who changed their orientations? Beyond these unexamined areas and limitations, the finding that relative disparity measures boosted R^2 on three SIR scales from 7% to 15%, although statistically significant, may have limited practical significance as Hays (1963) has observed.

Nevertheless, the major outcome of this study was that student-instructor incongruence conceptualized in a manner which speaks to the magnitude and direction or nature of the disparity appeared more salient than a scheme which assessed absolute magnitude alone. This observation suggests some considerations for further research and certain implications for designs which address student-instructor and student-college congruency.

From a methodological standpoint, replicative attempts could benefit from a larger and more heterogenous sample in order to investigate the patterns of student-instructor congruence across various disciplinary fields. Moreover, can discernible groups of students and faculty be formed on the basis of their total educational orientation profile? Perhaps "Q-type" cluster or typological analyses would allow for a more comprehensive assessment of student-instructor fit, rather than performing scale-by-scale analyses as was the case in this study. If student and

faculty groupings are possible (formed by examining overall profiles of response on educational orientation scales), what are the cognitive, affective, and behavioral outcomes for different types of student/faculty "matching" arrangements?

A precursor to this latter question, however, is the conceptualization of "relative fit." This study obtained faculty orientations directly from faculty, thus constituting an "alpha" press (Murray, 1938) when determinations of disparity were made. In what way would the results differ if the determination was based on the subjective "beta" press--that is, if students' perceptions of their instructor's orientations were used? Theoretical bases would therefore center more on symbolic interactionism (Blumer, 1969) and the rater's perception of the instructor and valence of the situation as perceived (Festinger, 1957). Irrespective of obtaining faculty orientations directly from faculty or as perceived by students, the use of absolute or relative disparity frameworks needs further attention. As per this study, there were substantive differences when these two schemes were employed on the same data base. Would these differences maintain in replicative attempts in the area of course evaluation ratings? Moreover, in the area of student-college congruency in relation to student satisfaction and withdrawal/continuance plans (Pervin, 1967; Pervin & Rubin, 1967), absolute disparity frameworks have been used. To what degree would the results from these studies be different if a relative disparity model had been used?

In conclusion, further efforts in assessing the nature and meaning of disparity in student and faculty orientations may have practical as well as theoretical implications for analyzing the teaching-learning process and its attendant outcomes. Course evaluation ratings--the focus of this study--have become an increasingly important factor in faculty personnel decisions regarding annual reviews and promotion/tenure deliberations. With respect to these ratings, it is observed at times that within the same class, a group of students may report that the faculty member is an "extremely effective instructor" and that they "have gotten a great deal of stimulation" from this course, and so on, while a majority (or minority) of students report just the opposite. Based on this investigation, perhaps the "relative fit" of student and faculty orientations has some bearing on these student ratings and comments.

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Footnotes

1. The items on the FOS have been reworded only slightly for faculty. A sample item from the Independent Study scale highlights these differences:

   SOS item: Instead of taking a regular course, I would rather have an individually-tailored "learning contract" with a faculty member.

   FOS item: Instead of offering a regular course I would rather have individually-tailored "learning contracts" with students.

2. The time constraints in each class precluded obtaining students' perceptions of the instructor's orientations in addition to students' own orientations and course ratings. Theoretically, as with DiMarco's (1974) effort, obtaining faculty orientations independently constituted an "alpha" press as discussed by Murray (1938).

3. A corresponding analysis of instructors' educational orientations showed moderate differences across the nine faculty members. The standard deviations for the six orientation scales ranged from 1.7 (Inquiry) to 4.1 (Interaction). To deal with this conceptually as-per this study, the measures of student-faculty disparity included in the regression analyses were related to the actual variation in instructor orientation scores.

4. Conceptually, student SOS scores (Step 2) were a precursor to creating disparity scores; from a practical standpoint, moreover, Step 3 requires a researcher to also obtain faculty orientation scores. The question at hand, then, was whether measures of student-instructor disparity had a noticeable influence on R^2 for the dependent SIR variable regressions.

TABLE 1

Multiple Regression Analyses of SIR Course Evaluation Scores on Students' Educational Orientation and Disparity Scores

Course Evaluation Dimensions	Steps in Hierarchical Regression: Step 1 Mult. R	Step 1 (R^2)	Step 1 Overall F-Ratio (df8,352)	Step 2 Mult. R	Step 2 (R^2)	Step 2 Overall F-Ratio (df14,344)	Step 2 F for R^2 change (df6,344)	Step 3 Mult. R	Step 3 (R^2)	Step 3 Overall F-Ratio (df20,338)	Step 3 F for R^2 change (df6,338)
Teacher-Student Relations	.493	(.243)	11.80**	.510	(.260)	7.07**	1.33	Abs .523 Rel .578	(.274) (.334)	5.32** 7.24**	1.09 6.47**
Course Objectives & Organization	.342	(.118)	4.90**	.401	(.161)	3.94**	3.00**	Abs .423 Rel .552	(.179) (.305)	3.07** 6.19**	1.25 12.04**
Quality of Lectures	.360	(.130)	5.47**	.413	(.171)	4.23**	2.85*	Abs .431 Rel .548	(.186) (.300)	3.22** 5.95**	1.04 10.00**
Quality of Readings	.434	(.188)	8.51**	.522	(.272)	7.69**	6.66**	Abs .539 Rel .541	(.292) (.293)	5.82** 5.84**	1.62 1.67

Note: Step 1, Dummy Variables to account for class differences in SIR scores.
Step 2, Inclusion of six educational orientation (SOS) scores.
Step 3, Inclusion of six student-instructor absolute or relative disparity scores.
*$p < .05$, **$p < .01$

TABLE 2

R^2 and F-Ratios for R^2 Change for SIR Scale Regressions on Student-Instructor Relative Disparity Score and Student Orientation Scores

Teacher-Student Relations			Course & Organization Objectives			Quality of Lectures			Quality of Readings		
Step	R^2	F	Step	R^2	F	Step	R^2	F	Step	R^2	F
All SOS ent.	.260	1.33	All SOS ent.	.161	3.00**	All SOS ent.	.171	2.85*	Class Differ.	.188	8.51**
Rel. Disp.			Rel. Disp.			Rel. Disp.			SOS		
Inq.	.278	8.35**	AL	.184	9.56**	A.L.	.217	19.93*	Inq.	.239	23.18**
A.L.	.295	8.62**	Inq.	.232	22.09**	Ach.	.240	10.96**	As	.260	10.00**
Int.	.323	14.96**	Int.	.251	9.03**	Int.	.256	7.19**	AL	.266	2.86
As	.330	3.68	Ach.	.279	13.37**	Inq.	.293	16.54**	IS	.269	1.43
Ach	.333	1.43	I.S.	.294	7.19**	As	.296	1.54	Int	.271	.95
IS	.334	.48	As	.305	5.24*	I.S.	.300	1.90	Ach	.272	.46

Note: Given the results presented in Table 2, the contribution of relative disparity measures above for first three SIR scales and students' SOS scores for Quality of Readings. Scale abbreviations: Inquiry (Inq); Study Interaction (Int); Achievement (Ach.); Assignment independent Learning (A.L.); Assessment (As).

*p < .05; **p < .01